

IN THE SPECIFICATION

Please amend the paragraph beginning on page 6, line 20 as follows:

FIG. 4 is a schematic diagram, similar to FIG. 2, but including a depolarization detector circuit **300 214** to assist in providing location assignments, such as when a pace pulse is detected as having different polarities on the second ECG vector **106B** and the third ECG vector **106C**. In this example, the depolarization detector circuit **300 214** includes a level detector circuit (or other suitable circuit, which may include filtering over a particular band and/or other signal processing) capable of distinguishing smaller amplitude atrial heart depolarizations from larger amplitude ventricular heart depolarizations.

Please amend the paragraph beginning on page 10, line 17 as follows:

To accommodate unipolar pacing and/or bi-ventricular pacing—or various other more complicated pacing modalities—the external device **200** of FIG. 2 includes a pacing pulse detector circuit **206** that is capable of providing one or more other characteristics of pace pulses that are capable of distinguishing between pace pulses delivered to different locations. For example, by sampling the ECG data obtained from the electrodes **100A-C** at a sampling rate of at least 60kHz, an amplitude and/or a pulsewidth of pace pulses can be measured by the pacing pulse detector circuit **206**. Moreover, polarity information may also be obtained, such as discussed above. Furthermore, the pace pulse detector circuit **206** can be used in combination with the depolarization detector circuit **300 214** to provide further characterizing information—such as a time difference between a pace pulse and a depolarization occurring soon (e.g., within a predetermined time period) before and/or after the pace pulse. The characterizing information (e.g., polarity, amplitude, pulsewidth, time difference with respect to a heart depolarization, etc.) can be used to recognize and distinguish between different classes of paces.

Please amend the paragraph beginning on page 11, line 3 as follows:

FIG. 7 is a flow chart illustrating generally, by way of example, but not by way of limitation, one method of classifying pace pulses into distinct classes using characterizing information, and then computing location assignments for the distinct classes. At 700, heart signals are received, such as from external electrodes 100A-C of FIG. 1, as described above. At 702, pace pulses are detected from the heart signals, such as by using the pace pulse detector circuit 206, as described above. At 704, any heart depolarizations associated with the pace pulses are detected, such as by using the depolarization detector circuit ~~300~~ 214, as described above. In one example, a detected depolarization is deemed to be associated with a particular pace pulse if it occurs within a predetermined time interval of the pace pulse. In another example, the detected depolarization is deemed to be associated with a particular pace pulse if it occurs within a predetermined time interval after the pace pulse. Moreover, ventricular depolarizations can be distinguished from atrial depolarizations, as discussed above, such as by using a level detector circuit, a morphology detector circuit, or any other one of several known techniques for distinguishing between atrial and ventricular heart depolarizations.